

PARTS LIST:

Qty	Part Number	Description
X	D412-664-249	CROSSTUBE ASSEMBLY (412 LOW AFT)
1	D6009-129	CROSSTUBE
2	D2856-600-1009	ABRASION STRIP
1	D2896-1	SUPPORT
2	D3189-1	CHAFING SHIELD
2	D3595-063-570	RUBBER CUSHION
2	D3660-1	CUFF
44	CR3212-4-07	RIVET (OR M7885/3-4-07)
4	MS21920-28	CLAMP
2	MS21920-30	CLAMP (OR MS21920-32)
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

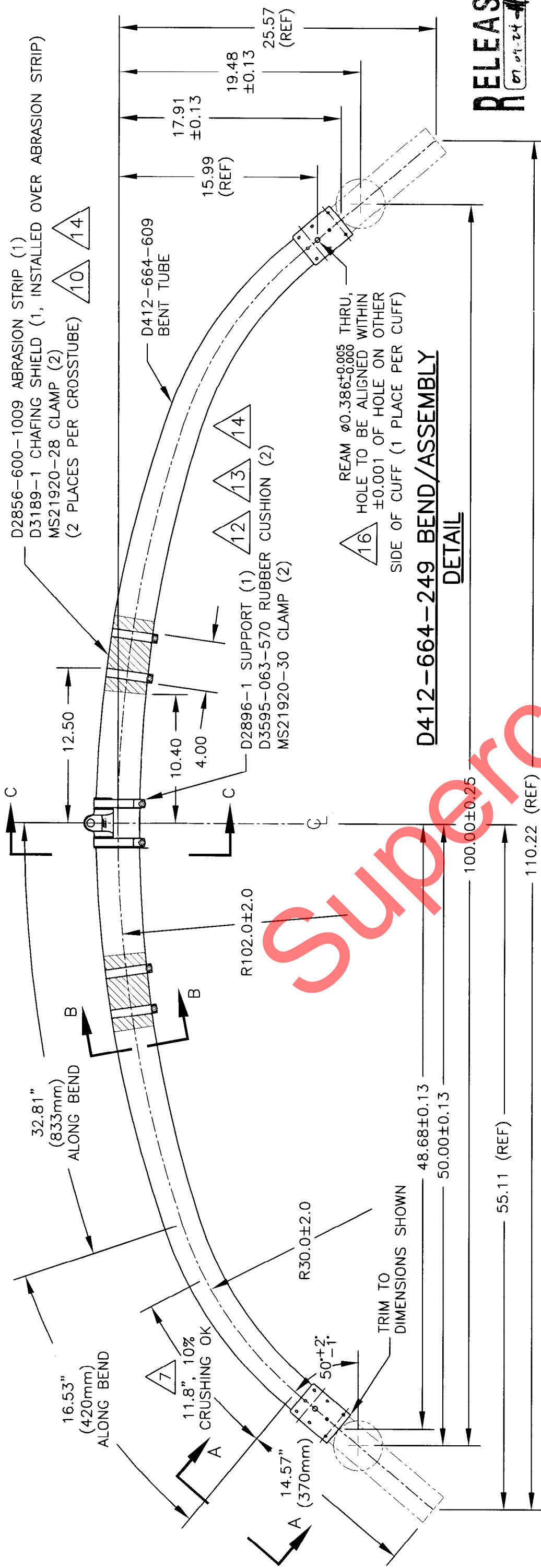
- 1) MATERIAL: MANUFACTURED FROM D6009-129
FINISHED LENGTH = 127.82±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER PART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER PART QSI 005 4.2
PAINT OUTSIDE PER PART 005 4.2
- 3) TOLERANCES ARE PER PART QSI 018 UNLESS OTHERWISE NOTED.
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) PART IS SYMMETRIC ABOUT CENTERLINE.
- 6) WHEN MACHINING TAPER, RUN-OFF PART AT STOCK. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 7) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 8) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 9) SCRIBE PART NUMBER AND BATCH NUMBER ON INNER SURFACE OF TUBE WITH A
VIBRATING STYLUS.
- 10) INSTALL D2856-600-1009 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF
CROSSTUBE PER QSI 035.
- 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
12) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2896-1
THAT WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER
INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-30 CLAMPS (OR -32) WITH D3595-063-570 RUBBER CUSHIONS TO SECURE
D2896-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE
CROSSTUBE SUPPORT.
- 14) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY
AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 15) INSTALL D3660-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A
LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN
CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- 16) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

RELEASED
07-09-24

A		07.07.07		NEW ISSUE	
DESIGN	GP	DRAWN BY	GP	DART DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA	
CHECKED	GP	APPROVED		DRAWING NO.	REV. A
DATE	07.07.07			D412-664-249	SHEET 1 OF 3
				TITLE	SCALE
				CROSSTUBE (412 LOW AFT)	NTS

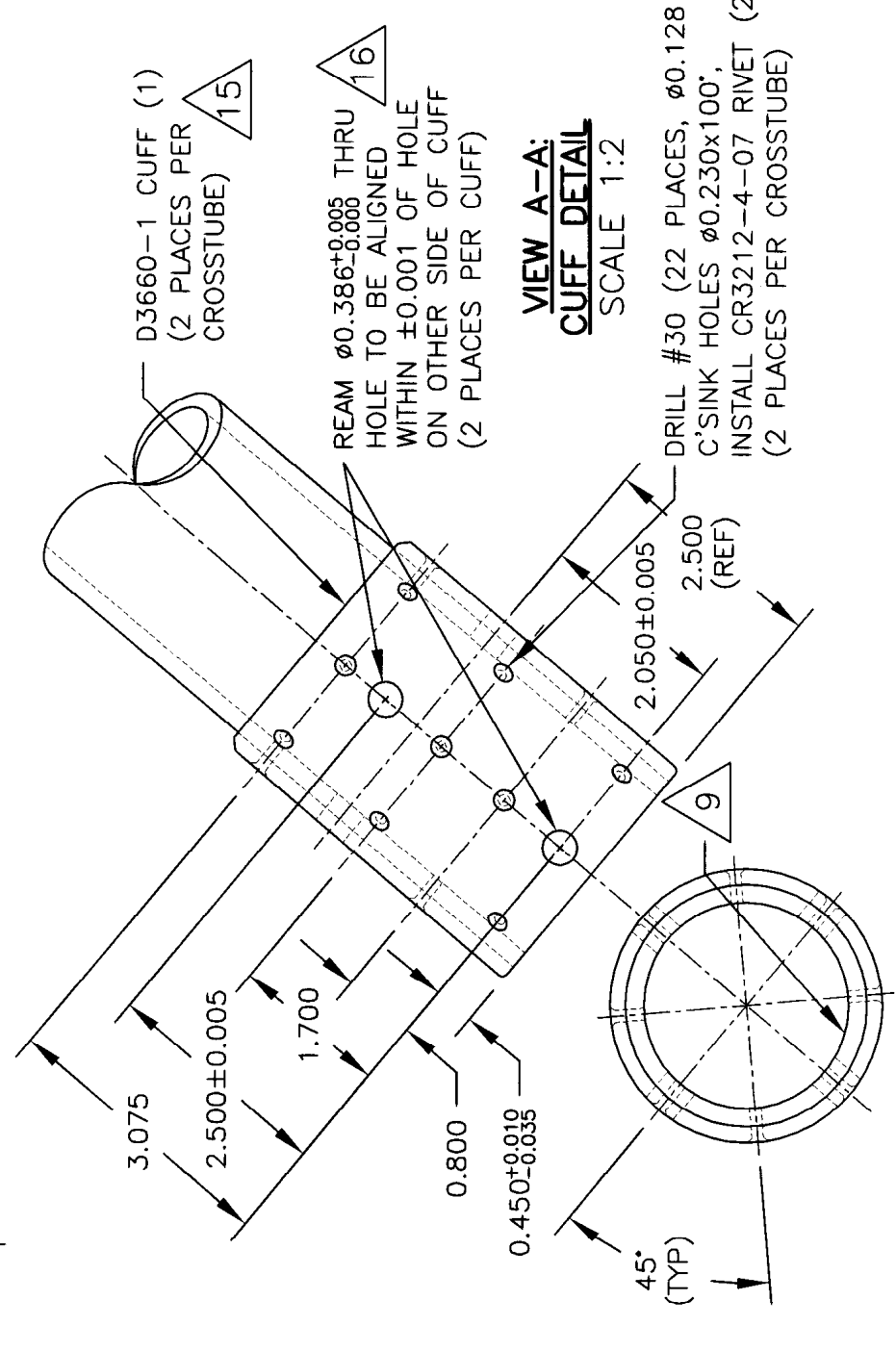
COPYRIGHT © 2007 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

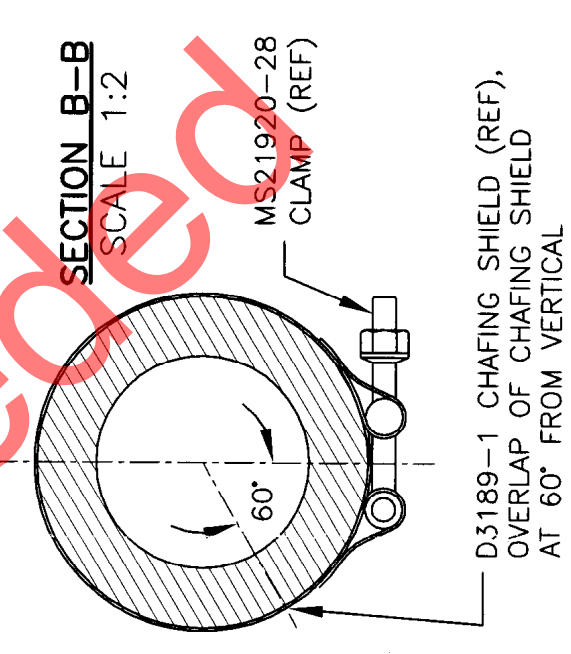


**D412-664-249 BEND/ASSEMBLY
DETAIL**

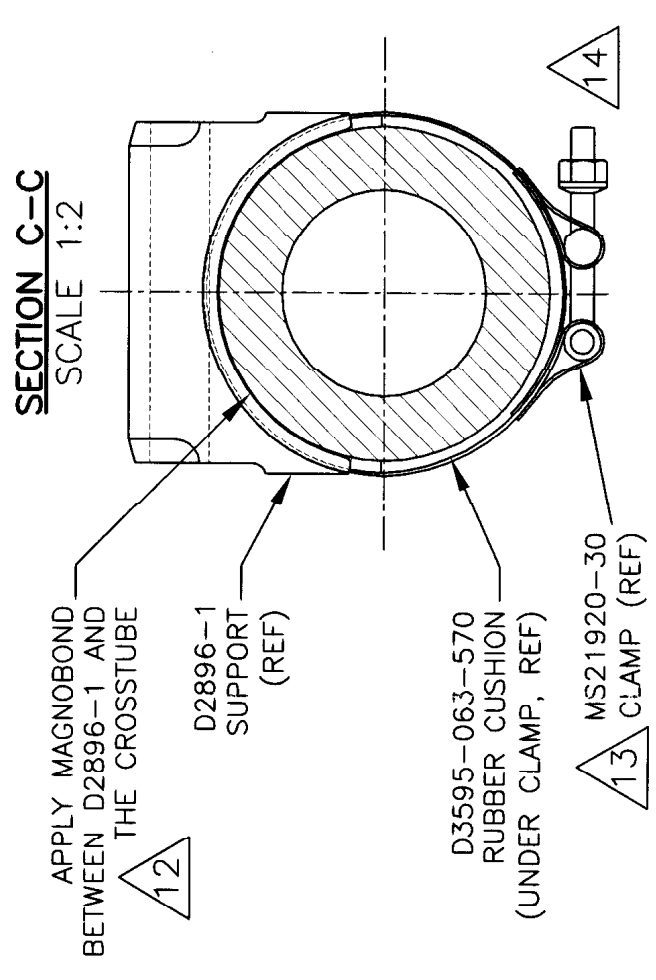
RELEASED
07.09.24



**VIEW A-A:
CUFF DETAIL
SCALE 1:2**



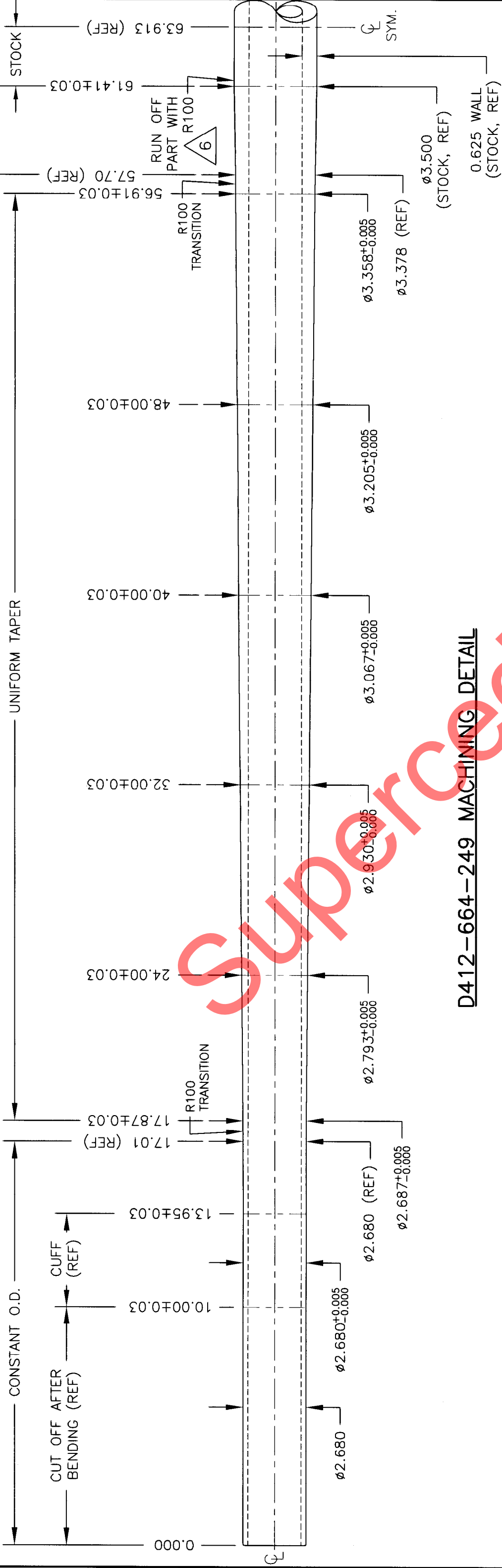
**SECTION B-B
SCALE 1:2**



**SECTION C-C
SCALE 1:2**

CROSSSTUBE (412 LOW AFT) 07.07.07		DESIGN 90	DRAWN BY 90	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED 90	APPROVED 90	DRAWING NO. D412-664-249	REV. A SHEET 2 OF 3	SCALE 1:8
DATE 07.07.07	TITLE CROSSSTUBE (412 LOW AFT)	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA	REV. A SHEET 2 OF 3	SCALE 1:8

COPYRIGHT © 2007 BY DART AEROSPACE LTD.
 THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL
 AND IS SUPPLIED ON THE EXPRESS CONDITION
 THAT IT IS NOT TO BE USED FOR ANY PURPOSE
 OR COPIED OR COMMUNICATED TO ANY OTHER
 PERSON WITHOUT WRITTEN PERMISSION FROM
 DART AEROSPACE LTD.



D412-664-249 MACHINING DETAIL

RELEASED
R 07.09.24

COPYRIGHT © 2007 BY DART AEROSPACE LTD.		DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		DESIGN gp	DRAWN BY gp
CHECKED PA		APPROVED [Signature]	DRAWING NO. D412-664-249
DATE 07.07.07		TITLE CROSSTUBE (412 LOW AFT)	REV. A SHEET 3 OF 3
		SCALE 1:4	